Modbus-RTU

Modbus-RTU international standard communication protocol, including three function codes: 03H, 06H, and 10H. The maximum read length for function

code 03H is 10 words, and the maximum write length for function code 10H is 8 words.

1:Function code

2.1 Function code 0x03 (read holding register)

- Command format as below：

	Address	Function code	Read register start address	Read data length	CRC
Number of bytes	1	1	2	2	2

Note: The value range of the starting address of the read register: 0~199 Read length value range: 1~10

- The response data format as follow：

	Address	Function code	Data area byte length	Data area	CRC
Number of bytes	1	1	1	Data area byte length bytes	2

2.2 Function code **0x06**（write a single holding register）

- Command format as below：

	Address	Function code	Address of the register to be written	Data to be written	CRC
Number of bytes	1	1	2	2	2

Remark：Range of the register to be written 0~199 Data to be written: -32768~32767

- Responding data format：

	Address	Function code	Address of the register to be written	Data to be written	CRC
Number of bytes	1	1	2	2	2

2.3 Function 0x10(write data to register in batch)

- Format as below

	addres s	Function code	write start address	Number of data written	Write bytes	data input	CRC
Number of bytes	1	1	2	2	1	Number of data written *2 bytes	2

- Note: The value range of the start address of the write register: 0~199, the write length range: 1-8, and the write data range -32768-32767;
- Responding data format：：

	Address	Function code	write start address	Write bytes	data input	CRC
Number of bytes	1	1	2	2	1	2

Register address list

Pu90

Register address	Parameter	Read or write	Description
0	MV	R	Range -100%-100%
1	ALM	R	Remark 1
2	PV	R	
3	SV	R/W	
4	uPAL	R/W	
5	LOAL	R/W	
6	ESAL	R/W	
7	EIAL	R/W	
8	AHYS	R/W	

Register address	Parameter	Read or write	Description
9	CtrL	R/W	0：ONOFF、1：APID、2：nPID 3：PoP、4：SoP
10	P	R/W	
11	I	R/W	Second
12	d	R/W	0.1 second
13	Ctl	R/W	0.1 second
14	Inp	R/W	Refer to user manual
15	dPt	R/W	0：0、1：0.0、2：0.00、3：0.000
16	SCL	R/W	Unit same as PV
17	SCH	R/W	Unit same as PV
18	AOP	R/W	Refer to user manual
19	Scb	R/W	Unit same as PV
20	Opt	R/W	Refer to user manual
21	OPL	R/W	%
22	OPH	R/W	%
23	AF	R/W	Refer to user manual
24	Model name	R	
25	Addr	R/W	Refer to user manual
26	Filt	R/W	
27	AMAn	R/W	0，MAN；1，Auto；2，FMAn3，FAut
28	LOC	R/W	
29	MV	R/W	%
30	SRUN	R/W	0，run；1，StoP；2，HoLd
31	CHyS	R/W	Unit same as PV
32	At	R/W	0，OFF；1，on；2；FoFF
33	SPL	R/W	Unit same as PV
34	SPH	R/W	Unit same as PV

Register address	Parameter	Read or write	Description
35	Fru	R/W	Refer to user manual
36	OHEF OPH	R/W	Refer to user manual
37	ACT	R/W	0：rE、1：dr、2：rEbA、3： drbA
38	AdIS	R/W	0： OFF、1： on
39	Aut	R/W	0： SSR、1： rELy、2： 0-20 3： 4-20
40	P2	R/W	Unit same as PV
41	I2	R/W	Second
42	d2	R/W	0.1 second
43	Ctl2	R/W	0.1 second
44	Et	R/W	0： nonE、1： ruSt、2： SP1.2 3： PId2
45	SPr	R/W	
46	Pno	R/W	1~30/50
47	Ponp	R/W	0： Cont、1： StoP 、2： run 3： dASt、4： HoLd
48	PAF	R/W	Refer to user manual
49	STEP	R/W	1~30/50
50	Time elapsed for current program	R/W	0.1 minute or 0.1 hour
51	Event output status	R/W	0, No event output; 1, event (AL1 ON; 2, AL2 ON; 3, AL1 and AL2 ON
52	Oprt	R/W	Second
53	Strt	R/W	
54	SPSL	R/W	Unit same as PV

Register address	Parameter	R/W	Description
55	SPSH	R/W	Unit same as PV
56	Ero	R/W	%
57	AF2	R/W	
58~66	Reserved for further use	R	
67~74	EP1-EP8	R/W	
75	Valve position	R	
76~82	Reserved for further use	R	
83	SP1	R/W	Unit same as PV
84	t1	R/W	0.1 minute /0.1 hour
85	SP2	R/W	Unit same as PV
86	t2	R/W	0.1 minute /0.1 hour
87~182	SP3~t50	R/W	
183~199	Reserved for further use	R	

Remark 1：

Alarm status

Bit 0	（UPAL）
Bit 1	（LoAL）
Bit 2	（ESAL）
Bit 3	（EIAL）
Bit 4	（orAL）
Bit 5	AL1 status，0 ON
Bit 6	AL2 status，0 ON
Bit 7	N/A